

26. (Amended) The method of claim 25 further comprising drawing the flow of external ambient air over [the] a second heat sink positioned in-line with the first heat sink.

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on July 5, 2002, and the references cited therewith.

Claims 2, 20, 23, 25, and 26 are amended, no claims are canceled or added; as a result, claims 1-30 remain pending in this application.

Rejections Under 35 U.S.C. §112

Claims 1-2, 20, 23, and 25-26 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claims 2, 23, and 25-26 have been amended to clarify the claims. No new matter has been added and the amendments are supported by the specification.

With regard to rejected claims 1, 20, and 25, the Office Action rejects the claims stating that the claims are “confusing for how can the housing be ‘closely fitted, coupling’ to housing 722?” Applicant respectfully disagrees. The Board of Patent Appeals and Interferences has stated:

In rejecting a claim under the second paragraph of 35 U.S.C. §112, it is incumbent on the examiner to establish that one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, would not have been able to ascertain with a reasonable degree of precision and particularity the particular area set out and circumscribed by the claims. *Ex parte Wu*, 10 USPQ 2d 2031, 2033 (B.P.A.I. 1989)(citing *In re Moore*, 439 F.2d 1232, 169 USPQ 236 (C.C.P.A. 1971); *In re Hammack*, 427 F.2d 1378, 166 USPQ 204 (C.C.P.A. 1970)).

The M.P.E.P. adopts this line of reasoning, stating that:

The essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of:

- (1) The content of the particular application disclosure;

(2) The teachings of the prior art; and
(3) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

M.P.E.P. § 2173.02.

Applicant respectfully submits that the claim language in question, when analyzed in light of the content of the application disclosure, is not indefinite. First, with regard to “closely fitted,” the application disclosure, at page 5, line 4, recites, “The housing is adapted to be closely fitted to a heat sink.” Further, at page 7, lines 19-20, the application recites, “The housing may be shaped to fit over any size or shape heat sink.” The application further discusses “closely fitted” at numerous points, including page 8, line 3 – page 9 line 2, figures 5A, 5B, 6A, 6B, 7A, and 7B. Additionally, embodiments of the present invention cure deficiencies described in the application at page 2, lines 10 – 23. Second, with regard to “coupling,” claim 20 recites, “A method of assembling a cooling system . . . comprising: closely coupling a housing to a heat sink for an integrated circuit.” This is a method of assembling a cooling system discussed in the application at page 15, line 25 through – page 16, line 7. Applicant respectfully submits that claims 1, 20, and 25 are allowable because the content of the application disclosure describes the invention to allow one of ordinary skill in the art to ascertain, with a reasonable degree of precision and particularity, the invention.

Applicant respectfully submits that claims 1-2, 20, 23, and 25-26 are now in condition for allowance in view of the amendments and clarifying arguments above. Reconsideration and withdrawal of the 35 USC § 112 rejections are respectfully requested.

Rejections Under 35 U.S.C. §102

Gourdine (U.S. Patent No. 5,422,787). Claims 1-6, 9-17, and 20-30 were rejected under 35 U.S.C. §102(b) as being clearly anticipated by Gourdine (U.S. Patent No. 5,422,787).

Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. Applicant respectfully submits that the Office Action does not make out a *prima facie* case of anticipation because Gourdine does not teach each element of applicant’s claims.

For example, independent claim 1 recites:

An apparatus for dissipating heat from an electronic device, the apparatus comprising:

a housing adapted to be closely fitted to a heat sink; the housing having a first end and a second end; and

an air moving device adapted to be coupled to a first end of the housing, the air moving device to move air through the housing. (emphasis added.)

In contrast, Gourdine describes a cabinet fan connected to a conduit 19 and the conduit 19 connected to enclosure housing 11. Gourdine, col. 8, line 58 – col. 9, line 22; Fig. 3. Applicant respectfully submits that because the fan (an air moving device) in Gourdine is attached to a conduit and not the enclosure housing, the fan is not “adapted to be coupled to a first end of the housing” as claimed in applicant’s independent claim 1. In fact, the fan in Gourdine is either an internal cabinet fan, or an external cabinet fan, for moving air through a cabinet and not an air moving device intended to move air through “a housing adapted to be closely fitted to a heat sink.” Thus, Gourdine does not teach each and every element of independent claim 1 because Gourdine does not teach “an air moving device adapted to be coupled to a first end of the housing. . . .”

Independent claims 11, 15, 20, 25, and 28 contain similar elements as independent claim 1 and are allowable over Gourdine for similar reasons.

Claims 2-10, 12-14, 16-17, 21-24, 26-27, and 29-30 depend, directly or indirectly on allowable independent claims 1, 11, 15, 20, 25, and 28 and are patentable over Gourdine for the reasons argued above, plus the elements of the claims. If an independent claim is allowable, then any claim depending therefrom is allowable.

Thus, applicant respectfully request reconsideration and withdrawal of the 35 USC § 102(b) rejections based on Gourdine.

Perdue (U.S. Patent No. 5,563,768). Claims 1, 6, 9-15, and 20 were rejected under 35 U.S.C. §102(b) as being clearly anticipated by Perdue (U.S. Patent No. 5,563,768).

As stated above, anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. Applicant respectfully submits that the Office Action does not make out a *prima facie* case of anticipation because Perdue does not teach each element of applicant's claims.

For example, independent claim 1 recites:

An apparatus for dissipating heat from an electronic device, the apparatus comprising:

a housing adapted to be closely fitted to a heat sink.... (emphasis added.)

In contrast, applicant respectfully points to FIG.s 1 and 7 of Perdue. Note that the upper wall of the housing 13 is tapered from a greater height on the left to a lesser height on the right. The distance between the top of fins 22 and the bottom of the upper wall of housing 13 is greater on the left than on the right. This does not comport with "closely fitted" as in applicant's claim 1 and as set forth by applicant. Page 5, line 4; page 7, lines 19-20; page 8, line 3 – page 9 line 2, FIGS. 5A, 5B, 6A, 6B, 7A, and 7B. Thus, Perdue does not teach each and every element of the independent claim 1 because Perdue does not teach "a housing adapted to be closely fitted to a heat sink."

Independent claims 15 and 20 contain similar elements as independent claim 1 and are allowable over Perdue for similar reasons.

Further, as shown in FIG. 1, Perdue allows for significant blowby as defined and discussed by applicant at page 2, lines 10-23. In contrast, applicant's independent claim 11 recites, "means to contain and guide air movement . . . wherein the means . . . substantially eliminates blowby." Thus, Perdue does not teach each and every element of the claim 11 because Perdue does not teach a means that substantially eliminates blowby.

Claims 6, 9-10, and 12-14 depend, directly or indirectly, on independent claims 1 and 11 and are patentable over Perdue for the reasons argued above, plus the elements of the claims.

Thus, applicant respectfully requests reconsideration and withdrawal of the 35 USC § 102(b) rejections based on Perdue.

Scholder (U.S. Patent No. 5,936,836). Claims 1, 6, 9-15, and 20 were rejected under 35 U.S.C. §102(e) as being clearly anticipated by Scholder (U.S. Patent No. 5,936,836).

Applicant respectfully submits that Scholder is not properly characterized as a 35 U.S.C. §102(e) reference because Scholder issued within one year prior to the filing date of the present application. Nevertheless, Applicant respectfully submits that Scholder does not anticipate the claims for the reasons argued below.

As previously stated, anticipation requires the disclosure in a single prior art reference of each and every element of the claim under consideration. Applicant respectfully submits that the Office Action does not make out a *prima facie* case of anticipation because Scholder does not teach each element of applicant's claims.

For example, independent claim 1 recites, "an air moving device . . . to move air through a housing." In contrast, Scholder describes directing air in a path formed by the combination of a shroud 18 and a microprocessor module 16b (see FIG. 3 of Scholder). Scholder describes a shroud 18 that "extends adjacent one microprocessor module and over the other." Scholder, col. 2, lines 18-20. In operation, air would not move through just the shroud described by Scholder. Rather, the fan assembly moves air through a path formed by the combination of the shroud and the microprocessor module.

However, independent claim 1 recites, "an air moving device . . . to move air through the housing." The American Heritage Dictionary of the English Language (Fourth Edition, 2000) defines the preposition "through" as "In one side and out the opposite or another side of" and uses the following example, "went through the tunnel." In addition, the Merriam-Webster online Dictionary (<http://www.m-w.com>) defines the preposition through as, "used as a function word to indicate movement into at one side or point and out another and especially the opposite side of" and uses as an example, "drove a nail through the board." Thus, Scholder does not anticipate independent claim 1 because Scholder describes a fan assembly that moves air along a cooling path formed by the combination of a shroud and a processor and not "an air moving device that moves air through a housing."

Independent claims 11, 15 and 20 contain similar elements as independent claim 1 and are allowable over Sholder for similar reasons.

Claims 6, 9-10, and 12-14 depend, directly or indirectly, on independent claims 1 and 11 are patentable over Sholder for the reasons argued above, plus the elements of the claims.

Thus, applicant respectfully requests reconsideration and withdrawal of the 35 USC § 102(e) rejections based on Scholder.

Bollesen (U.S. Patent No. 6,304,445). Claims 1, 9-15, 20-21, and 28-30 were rejected under 35 U.S.C. §102(e) as being clearly anticipated by Bollesen (U.S. Patent No. 6,304,445).

Applicant does not admit that Bollesen is prior art, and reserves the right to swear behind it at a later date. Nevertheless, Applicant respectfully submits that the claims are distinguishable over Bollesen for the reasons argued below.

Applicant respectfully submits that the Office Action does not make out a *prima facie* case of anticipation because Bollesen does not teach each element of applicant's claims.

For example, independent claim 1 recites, “a housing adapted to be *closely fitted to a heat sink* . . . and . . . the air moving device to *move air through the housing*.” (*emphasis added.*) In contrast, Bollesen describes a fan mounting bracket 300A with a top plate 330A that extends the length of fins 218. Col. 10, lines 38-67; FIG. 15. Fan mounting bracket 218 is not “closely fitted to a heat sink” because fan mounting bracket sides 308-1A and 308-1B do not extend the length of fins 218 or top plate 330A. Further, Bollesen describes the use of a fan to force air only between top plate 330A and fins 218 while claim 1 recites, “the air moving device to move air through the housing.” Thus, Bollesen does not teach each and every element of independent claim 1 because Bollesen does not teach a closely fitted housing and Bollesen forces air between the fins and does not move air through a housing.

Independent claims 11, 15, 20, and 28 contain similar elements as independent claim 1 and are allowable over Bollesen for similar reasons.

Claims 9-10, 12-14, 21, and 29-30 depend, directly or indirectly, on independent claims 1, 11, 20 and 28 are patentable over Bollesen for the reasons argued above, plus the elements of the claims.

Thus, applicant respectfully requests reconsideration and withdrawal of the 35 USC § 102(e) rejections based on Bollesen.

Yu (U.S. Patent No. 5,497,825). Claims 1, 9-17, 20, 25, and 28-30 were rejected under 35 U.S.C. §102(b) as being clearly anticipated by Yu (U.S. Patent No. 5,497,825).

Applicant respectfully submits that the Office Action does not make out a *prima facie* case of anticipation because Yu does not teach each element of applicant's claims.

For example, claim 1 recites, "an air moving device adapted to be coupled to a first end of the housing. . . ." In contrast, as shown in FIG. 7, Yu has an exhaust box connected to a housing with a bellows, the exhaust box having a blower. Thus, Yu does not teach each and every element of independent claim 1 because Yu does not describe "an air moving device adapted to be coupled to a first end of the housing."

Independent claims 11, 15, 20, 25, and 28 contain similar elements as independent claim 1 and are allowable over Yu for similar reasons.

Claims 9-10, 12-14, 21, and 29-30 depend, directly or indirectly, on independent claims 1, 11, 20 and 28 and are patentable over Yu for the reasons argued above, plus the elements of the claims.

Thus, applicant respectfully requests reconsideration and withdrawal of the 35 USC § 102(b) rejections based on Yu.

Rejections Under 35 U.S.C. §103

Claims 7-8 were rejected under 35 U.S.C. §103(a) as being unpatentable over Gourdine (U.S. Patent No. 5,422,787).

Applicant respectfully submits that claims 7 and 8 are allowable because they depend indirectly on independent claim 1 which applicant submits is allowable for the reasons stated above. If an independent claim is allowable, then any claim depending therefrom is allowable. Applicant also respectfully submits that claims 7 and 8 are allowable for the reasons below.

To establish a *prima facie* case of obviousness, the reference must teach or suggest all the claim elements. M.P.E.P. § 2142 (citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed.Cir. 1991)). However, as previously stated, Gourdine does not teach all the elements of claims 7 and 8.

For example, independent claim 1, from which both claims 7 and 8 depends, recites:

An apparatus for dissipating heat from an electronic device, the apparatus comprising:

a housing adapted to be closely fitted to a heat sink; the housing having a first end and a second end; and

an air moving device adapted to be coupled to a first end of the housing, the air moving device to move air through the housing. (emphasis added.)

In contrast, Gourdine describes a cabinet fan connected to a conduit 19 and the conduit 19 connected to enclosure housing 11. Gourdine, col. 8, line 58 – col. 9, line 22; Fig. 3. Applicant respectfully submits that because the fan (an air moving device) in Gourdine is attached to a conduit and not the enclosure housing, the fan is not “adapted to be coupled to a first end of the housing” as claimed in applicant’s independent claim 1. In fact, the fan in Gourdine is either an internal cabinet fan, or an external cabinet fan, for moving air through a cabinet and not an air moving device intended to move air through “a housing adapted to be closely fitted to a heat sink.” Thus, Gourdine does not teach each and every element of independent claim 1 because Gourdine does not teach “an air moving device adapted to be coupled to a first end of the housing. . . .” Accordingly, Applicant respectfully submits that claims 7 and 8 are allowable because Gourdine does not teach each and every element of independent base claim 1 from which both claims 7 and 8 depend.

Additionally, the Office Action rejected claims 7 and 8 based solely on Gourdine. Applicant respectfully traverses the single reference rejection under 35 U.S.C. § 103 since not all of the recited elements of the claims are found Gourdine. Since all the elements of the claim are not found in the reference, Applicant assumes that the Examiner is taking official notice of the missing elements. Applicant respectfully objects to the taking of official notice with a single reference obviousness rejection and, pursuant to M.P.E.P. § 2144.03, Applicant respectfully traverses the assertion of Official Notice and requests that the Examiner cite references in support of this position.

Thus, applicant respectfully requests reconsideration and withdrawal of the 35 USC § 103(a) rejections based on Gourdine.

Documents Cited but Not Relied upon for this Office Action

Applicant need not respond to the assertion of pertinence stated for the references cited but not relied upon by the Office Action since these references are not made part of the rejections in this Office Action. Applicant is expressly not admitting to this assertion and reserves the right to address the assertion should it form part of future rejections.

Allowable Subject Matter

Claims 18 and 19 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant acknowledges the allowability of claims 18 and 19 if rewritten to incorporate the elements of their parent claims. However, in view of the arguments above with respect to independent claim 15, applicant respectfully submits that dependent claims 18 and 19 are allowable in their present form.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612) 349-9592 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 09/615,922

Filing Date: July 13, 2000

Title: METHOD AND APPARATUS FOR DISSIPATING HEAT FROM AN ELECTRONIC DEVICE

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Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, Washington, D.C. 20231, on this 6th day of January, 2003.

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